AMBIENT AIR AND METEOROLOGICAL MONITORING
FOR
TRUE GEOTHERMAL ENERGY COMPANY
KILAUEA MIDDLE EAST RIFT ZONE, ISLAND OF HAWAII
OCTOBER 1990 DATA REPORT

Submitted to:

Ms. Renee Taylor

True Geothermal Energy Company

Prepared by:

MEASUREMENT TECHNOLOGIES

November 1990

CN-137

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1.0 Introduction

Measurement Technologies has been contracted by True Geothermal Energy Company to conduct an air quality and meteorological monitoring program to support incremental exploration and development of the Kilauea Middle East Rift Zone Geothermal Resources Subzone (GRS), Puna District, Island of Hawaii. The data gathered in the monitoring program is being used in support of the exploration and possible development of the geothermal resource.

The monitoring program consists of two (2) monitoring sites. The first site (Site 1) is located in the Kaohe Homesteads area and the second site (Site 2) is located at the geothermal drilling and staging area D-1. The monitored parameters for each site are contained in Table 1-1. The sites are being operated consistent with the guidelines and requirements as outlined in the following documents:

- "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)," U.S. EPA-450/4-80-012, November 1980.
- "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume IV. Meteorological Measurements," U.S. EPA-600/4-82-060, February 1983.
- "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II," Ambient Air Specific Methods, U.S. EPA-600/4-77-027a, May 1977.

As part of the monitoring program, Measurement will submit monthly and quarterly reports to True Geothermal Energy Company. The reports will contain the monitoring data, results of the quarterly quality assurance audits and results of quality control activities such as SO_2 and H_2S gas analyzer precision checks, level 1 and 2 checks and multipoint calibration results.

TABLE 1-1 Monitored Parameters

PARAMETER	SITE 1	SITE 2 (MET)
HYDROGEN SULFIDE (H_2S)	X	8 PLS
SULFUR DIOXIDE (SO_2)	X	X
WIND DIRECTION	X	X
WIND SPEED	X	X
VERTICAL WINDS		X
SIGMA THETA	X	X
SIGMA W		X
TEMPERATURE	X	
PRECIPITATION	X	
RAIN WATER (ANIONS & DISSOLVED METALS)	3 PLS	
METALS (ATMOSPHERIC PARTICULATE	X	
TOTAL SUSPENDED PARTICULATE (TSP)	X	
INHALEABLE PARTICULATES (PM-10)	X	
RADON		X

Section 2.0 of this report contains a operations narrative of significant events and activities that occurred during the month of September. Section 3.0 of this report contains the data collected during the month with graphical presentations and data capture summaries. The data is presented by site numbers and may also be referred to by name. Site 1 and 2 names are Air Quality/Met and Met Site, respectively.

2.0 Operations Summary

This section discusses the operations of the two monitoring sites and any significant events that may affect data quality. A downtime summary is also provided.

2.1 Monthly Operations Summary

Site 1 and 2 operations were routine for the month of October. Results of the radon samples exposed for the October period indicated radon levels were below 0.4 pCi/l.

The rain water samples collected during October show insignificant levels of compounds and metals. The results of the analysis are contained in Section 3.0, Table 3-8 of this report.

The filter analyses for metals and particulate in October show insignificant concentrations and loadings for the compounds of interest in the program. The results are contained in Section 3.0, Tables 3-9 thru 3-14.

The continuous H_2S analyzer at Site 1 detected no significant levels of H_2S during October. Measured levels were below 1 part per billion. The H_2S dosimeter badges located at the Drill Site 2 measured detectable concentrations of H_2S during October. Levels of H_2S were measured on October 13 and 14, 1990. H_2S dosimeter badges are located at all of the major Cardinal directions around the Drill Site. The highest level measured was downwind of the Drill Site on the badge located to the Southwest. The measured value on the Southwest badge was 12 parts per billion on the 14th reading. The other badges measured concentrations below 1 part per billion. The residential areas would not be impacted with winds out of the Southwest.

It might be noted that wind direction data showing zero's as a value, may correlate with a wind speed of zero. The

wind direction is a vector average and if the wind speed is zero the wind direction is not calculated. The winds are considered calm in these conditions and pollutants are in a stagnate condition, (not being transported).

2.2 Downtime Summary

This section presents the down time summary by site. Down time is considered any time an analyzer or sensor is not collecting valid data. Down time includes calibration time, data lost due to data validation criteria, audit time, time lost due to maintenance and malfunctions, etc.

Data capture at Site 1 was excellent in October, with all parameters exceeding 98 percent data capture. Site 2 also had excellent data capture in October with all parameters having 100 percent data capture for the eighth straight month.

2.3 Major Activities

No major activities were noted during the month of October.

3.0 Data Summary

Section 3.0 contains monthly summary reports and statistic tables for all of the major monitored parameters. In addition, graphical wind rose plots, rain water analyses results, total suspended (TSP) and inhaleable (PM-10) particulate loading and metals analyses are also contained in this section. The data and associated graphical presentations are presented by site. Each sites data is organized and presented as follows:

- Monthly Summary Report containing the hourly values for each day of the month. Dashes contained in the place of any data signifies that the data falls into a down time category previously discussed in Section 2.0. An asterisk sign in the wind sigma theta signifies calm wind conditions.

- A graphical wind rose presentation will immediately follow the Monthly Summary Report. The wind rose displays a graphical presentation of the wind speed and direction at each site.

- Summary Statistic Tables containing the highest and second highest measured values, lowest value, arithmetic mean and standard deviation, data recovery rates and percentile breakdowns of measured values.

- TSP and PM-10 particulate data showing loading of each filter along with the elemental analyses of each metals filter (Site 1 only).

- Rain water analyses results showing each sample collected and the results of the metals elemental and anion analyses (Site 1 only).

3.1 Air Quality/Meteorological Monitoring Data Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 WD (DEG) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	324	319	317	311	319	305	312	313	309	315	328	332	330	343	9	346	352	336	0	123	311	270	282	292
2	263	0	263	296	270	276	262	318	342	350	12	4	16	42	33	97	31	346	345	348	343	341	338	328
3	310	180	321	309	317	308	313	315	329	333	109	120	115	119	109	112	15	344	347	346	336	326	335	333
4	326	321	322	325	325	336	321	327	341	345	351	346	348	348	347	348	349	351	342	332	320	318	328	310
5	314	314	313	316	321	319	321	325	336	338	346	348	352	349	348	350	348	346	334	332	326	325	332	326
6	322	320	321	323	326	316	312	323	340	344	351	356	359	357	54	79	36	10	351	342	323	313	307	301
7	314	294	317	296	317	305	306	321	340	334	327	330	326	340	344	339	345	350	336	313	305	311	297	294
8	307	299	287	291	285	303	302	320	348	354	9	90	72	61	98	45	35	349	0	0	0	280	161	248
9	274	271	309	312	295	299	296	315	325	323	348	349	0	357	353	351	348	347	336	319	308	309	314	314
10	321	316	312	317	322	315	324	325	338	342	350	346	350	347	350	347	349	348	337	338	337	330	340	340
11	332	328	345	342	350	348	351	347	345	355	360	353	346	348	351	31	0	349	348	348	347	344	338	334
12	334	324	326	323	325	327	325	327	333	346	340	345	350	350	349	349	348	351	344	344	331	313	315	313
13	307	308	304	315	313	314	316	317	335	337	341	347	350	351	349	348	348	336	325	323	323	321	324	325
14	325	328	327	325	323	321	321	329	336	340	340	339	345	353	351	349	348	348	343	344	339	336	334	327
15	332	322	325	324	323	327	325	331	341	346	346	348	350	347	349	351	349	350	343	340	336	327	304	316
16	305	180	302	90	297	310	294	312	343	353	53	46	2	355	59	83	47	20	337	326	339	323	305	314
17	309	322	314	315	320	324	323	336	329	333	345	344	348	359	352	353	345	348	344	357	57	71	52	38
18	30	0	342	339	333	320	310	320	326	328	338	346	356	37	86	59	69	72	116	35	100	126	135	115
19	126	130	101	315	304	172	180	317	320	326	322	121	119	122	123	124	121	120	118	131	129	123	135	147
20	180	118	180	0	129	184	180	0	123	119	124	129	123	127	117	120	118	124	125	122	90	158	0	0
21	0	0	180	0	0	0	0	180	352	126	119	110	122	131	122	124	108	123	327	0	7	113	39	111
22	90	0	312	317	320	317	317	322	335	349	346	350	350	351	348	348	348	348	333	333	335	333	322	316
23	304	310	294	296	287	289	279	317	332	343	345	351	1	1	23	31	12	19	5	346	348	346	320	314
24	315	315	303	320	321	329	322	332	338	334	337	342	349	352	349	352	351	348	352	336	330	351	314	305
25	316	323	300	304	313	313	312	326	337	341	351	354	349	353	353	350	347	346	342	339	317	319	329	317
26	300	301	300	286	284	276	344	314	318	319	342	349	351	355	348	348	346	348	341	322	331	324	309	302
27	308	316	314	311	309	311	315	324	336	344	350	355	352	353	347	12	323	341	339	325	321	317	311	291
28	315	306	288	291	289	299	291	312	334	343	348	349	354	349	348	350	349	342	330	321	324	314	317	310
29	306	304	302	295	305	308	307	316	315	316	325	336	348	348	348	352	346	336	320	331	350	336	321	325
30	320	317	314	313	319	319	314	118	125	125	124	114	107	95	16	349	345	334	336	0	319	312	307	309
31	295	301	295	316	312	305	319	307	323	355	9	31	24	8	72	97	121	289	235	264	266	227	310	128

Table 3-1. Wind Direction Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 WS (MPH) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	4.6	4.3	4.1	2.7	2.8	1.7	3.3	2.2	2.2	4.0	4.5	3.6	3.8	2.8	1.1	2.4	1.6	0.4	0.0	0.2	0.3	0.1	0.4	0.6
2	0.0	0.0	0.0	0.4	0.0	0.4	0.1	1.1	2.8	2.4	1.8	1.9	1.3	1.6	1.0	1.7	0.9	1.7	3.0	2.7	3.0	3.6	2.3	2.1
3	1.8	0.1	0.3	1.0	1.7	1.4	0.9	1.0	1.4	1.6	1.0	1.0	1.3	1.4	1.0	0.5	0.7	1.6	1.0	1.1	1.3	2.5	1.6	2.6
4	2.3	3.9	3.2	3.1	4.0	4.6	4.4	4.3	6.4	6.7	5.4	5.6	5.5	4.8	5.8	6.4	6.5	5.6	5.7	5.0	4.4	3.5	3.9	3.2
5	3.0	3.8	3.1	1.1	4.9	4.3	5.1	6.1	7.7	8.3	7.9	7.7	7.0	5.2	5.0	5.3	4.4	3.2	4.7	3.0	3.2	3.6	2.8	3.7
6	3.4	4.3	4.2	4.7	4.1	3.4	3.1	2.9	7.2	7.3	5.6	4.2	3.4	2.4	1.5	1.1	0.8	1.0	0.8	0.8	2.7	1.8	1.3	1.6
7	3.0	1.0	1.2	0.8	2.9	2.3	1.9	3.4	3.5	4.2	4.2	4.0	4.9	5.1	4.3	4.9	4.1	1.7	1.4	2.1	1.6	2.3	1.2	1.1
8	1.9	0.6	0.4	0.1	0.1	1.3	0.7	0.9	2.5	2.3	1.6	1.5	1.8	1.8	1.5	1.0	0.7	1.1	0.0	0.0	0.0	0.1	0.2	0.1
9	0.1	0.3	0.4	2.0	0.2	0.9	1.0	2.4	3.5	5.5	3.5	3.6	3.4	3.2	4.5	4.7	4.5	3.2	1.2	1.9	2.8	3.5	4.3	3.5
10	4.4	4.6	4.3	1.9	2.7	4.3	4.5	5.4	7.0	8.0	7.9	8.9	8.0	7.1	8.4	8.6	7.7	6.2	6.8	6.1	6.3	5.3	4.2	3.5
11	3.2	3.9	4.3	4.3	2.9	2.0	1.6	2.7	4.8	2.5	3.5	3.9	7.2	5.9	3.5	1.5	2.2	4.7	4.5	3.9	3.2	2.3	3.1	3.9
12	4.5	3.9	4.8	5.2	5.2	4.9	3.3	4.9	4.7	3.7	5.7	6.0	5.8	5.8	5.1	5.9	6.4	5.3	4.4	4.2	4.9	1.6	2.5	2.0
13	1.0	2.4	1.0	2.7	3.5	3.1	3.7	3.8	7.4	7.3	7.2	6.6	5.4	5.5	4.8	6.0	6.5	6.1	6.1	5.9	6.5	6.5	5.5	5.4
14	5.9	5.5	6.1	5.3	6.6	5.9	5.3	6.2	7.3	8.3	7.6	7.8	6.9	5.2	5.4	6.3	6.0	5.1	4.4	4.3	5.2	5.2	4.1	5.1
15	4.4	4.8	5.1	4.8	5.1	5.9	5.7	6.2	7.2	6.9	6.5	6.0	6.1	6.8	7.2	6.0	5.9	5.6	5.5	4.6	3.9	3.8	0.9	1.6
16	0.8	0.0	0.2	0.0	0.2	0.8	0.4	1.9	0.5	2.2	0.7	0.8	1.1	1.8	1.2	0.8	0.7	0.5	1.7	2.6	1.5	3.8	2.0	2.8
17	1.7	1.8	1.9	2.3	3.3	3.6	4.3	2.2	5.7	5.7	5.7	4.8	4.7	3.5	4.5	4.2	3.2	2.3	2.5	1.0	0.7	0.4	0.4	0.5
18	0.6	0.0	2.3	4.1	4.1	3.7	2.6	4.7	5.5	6.2	5.2	4.5	1.9	1.1	1.2	1.1	0.8	0.6	0.4	0.4	0.2	1.0	0.9	0.5
19	2.4	1.4	0.3	1.4	0.4	0.1	0.1	0.2	0.6	2.5	1.4	0.8	1.4	2.4	3.2	1.9	1.7	1.5	1.4	0.5	1.1	0.4	0.4	0.4
20	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	1.3	1.3	2.0	2.8	3.2	3.6	3.2	3.6	3.1	1.8	0.3	0.4	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	1.8	2.3	3.6	4.4	2.9	2.4	1.1	0.1	0.1	0.0	0.1	0.0	0.0	0.2
22	0.0	0.0	0.5	1.9	2.3	2.4	3.3	3.6	5.9	5.9	6.8	7.0	5.9	6.0	6.6	5.7	5.2	5.1	4.7	5.0	4.0	4.5	1.2	2.8
23	2.2	1.5	0.7	0.6	0.3	0.3	0.0	0.4	3.3	4.9	4.5	3.2	2.5	2.9	1.4	1.0	1.4	0.8	1.5	3.8	3.8	4.7	4.2	2.7
24	3.1	3.5	2.3	4.0	5.6	6.8	6.1	6.3	6.9	6.8	7.5	6.2	5.3	5.3	5.9	5.9	5.9	5.1	2.4	4.3	5.4	2.2	1.4	1.0
25	2.7	3.6	0.9	0.2	0.9	1.8	1.7	2.9	3.1	2.0	3.6	2.9	4.2	4.4	3.4	4.3	4.5	4.1	3.3	2.0	2.5	3.1	3.8	0.8
26	0.1	0.7	0.7	0.1	0.3	0.1	0.7	3.4	3.9	4.6	4.3	3.3	4.0	3.7	4.7	4.2	4.1	2.4	1.0	0.2	1.5	0.4	0.4	0.5
27	0.7	1.3	3.2	1.7	2.6	3.0	4.2	5.1	7.2	6.4	5.1	5.5	5.0	4.5	4.6	2.1	2.8	2.7	2.8	2.6	3.8	3.6	0.4	0.7
28	1.8	1.1	0.6	1.3	0.8	1.3	1.0	1.6	5.0	4.9	4.2	4.8	4.5	4.1	4.2	4.6	5.7	4.8	4.6	5.3	3.4	4.1	1.6	1.8
29	1.7	1.0	2.0	1.6	2.4	3.2	2.8	2.7	4.8	5.1	5.8	5.5	5.5	5.8	5.8	4.4	5.7	4.5	4.8	3.1	2.0	4.2	4.9	5.2
30	4.9	4.1	3.0	2.6	4.1	1.4	0.3	1.6	2.2	2.0	1.7	1.8	1.6	1.2	1.5	0.9	2.4	1.9	1.0	0.0	1.9	0.6	1.0	1.2
31	0.5	0.2	0.3	1.4	1.2	1.0	1.3	1.0	1.7	2.9	1.5	0.6	1.2	1.7	1.1	1.2	1.3	0.0	0.0	0.0	0.1	0.1	0.4	0.4

Table 3-2. Wind Speed Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 Sigθ1 (deg) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	16.6	16.3	17.4	18.2	30.9	39.4	23.1	37.1	38.5	28.1	19.9	41.0	43.2	43.9	75.6	58.6	68.1	59.9	114.6	100.1	107.6	63.2	77.4	41.8
2	81.4	122.9	108.7	79.6	91.8	49.4	44.8	59.2	34.2	56.9	63.7	63.7	78.3	76.5	77.3	73.6	80.5	43.9	24.5	25.1	20.9	21.8	42.2	19.4
3	42.6	67.4	35.9	39.1	31.7	38.9	43.8	44.1	32.2	38.5	70.2	67.7	62.4	63.1	72.6	71.5	76.7	38.3	49.8	56.4	48.2	43.9	47.4	33.0
4	24.9	18.8	18.6	16.6	17.5	20.5	16.8	17.1	18.1	25.4	32.3	27.1	26.4	34.5	31.3	29.6	28.5	24.9	20.5	17.1	20.3	19.0	19.8	31.2
5	30.9	25.8	25.2	74.1	24.5	24.3	18.6	18.0	17.5	20.4	26.2	31.5	38.3	45.1	46.1	44.6	35.9	42.4	20.9	17.0	16.4	17.2	18.0	15.4
6	15.4	17.2	16.3	17.2	17.7	20.1	17.9	48.4	21.8	24.6	41.7	55.6	58.1	70.1	78.0	80.0	81.8	59.7	50.7	39.9	47.0	30.3	28.7	37.5
7	19.4	25.2	36.7	24.1	21.4	26.8	30.3	18.3	16.5	18.3	17.9	24.6	18.6	21.2	35.0	20.5	34.4	41.8	24.6	26.8	31.3	21.9	40.2	30.8
8	34.5	58.7	46.2	68.6	48.3	26.4	32.3	42.9	43.3	61.1	77.8	78.0	77.9	76.9	74.8	79.4	83.3	46.0	59.4	105.2	99.2	91.2	73.6	72.3
9	48.4	48.4	48.9	32.8	82.3	70.2	35.7	33.4	24.8	24.6	55.9	58.4	58.2	59.4	46.0	45.5	43.3	39.0	31.3	19.6	19.0	17.1	19.8	19.8
10	16.1	16.4	18.3	62.7	23.4	16.5	17.7	16.8	20.7	20.8	28.4	27.6	30.3	29.6	26.9	25.8	28.6	29.6	19.8	23.1	19.1	20.7	41.8	31.1
11	36.4	18.7	23.7	24.1	47.4	45.9	64.7	36.1	34.1	64.8	58.2	59.7	26.8	35.5	50.4	73.9	60.9	33.0	27.3	31.5	31.7	28.7	20.1	17.9
12	18.8	18.0	16.4	17.7	16.5	15.9	24.5	18.8	17.9	32.3	36.3	36.3	43.3	39.4	42.2	35.6	27.5	26.4	24.2	25.7	19.3	50.0	26.3	30.8
13	47.4	25.4	33.9	23.6	21.8	19.9	20.9	24.3	17.7	19.7	23.5	33.3	43.7	44.4	45.9	34.7	25.7	22.0	18.0	19.1	16.5	17.2	16.9	18.0
14	16.8	16.6	16.1	15.4	17.9	18.3	18.1	17.5	19.1	21.5	24.3	24.5	28.2	41.2	42.9	35.2	29.3	28.0	22.5	22.4	23.4	18.2	19.4	16.0
15	20.4	16.5	16.8	16.0	16.3	15.7	16.8	16.1	20.4	24.9	27.6	35.9	36.7	32.5	28.7	36.3	32.6	25.8	19.4	19.0	17.6	34.0	40.1	27.9
16	46.8	79.2	60.6	76.4	53.8	34.6	39.5	23.2	61.1	46.5	75.8	84.5	85.3	65.3	80.0	88.9	86.3	81.8	21.6	17.1	22.9	21.3	25.6	19.1
17	20.2	20.2	18.7	19.1	16.6	16.3	16.9	72.3	17.0	18.8	25.7	34.6	42.6	57.2	49.9	47.9	43.2	47.2	56.7	59.9	85.2	79.7	80.5	79.1
18	69.5	45.2	20.3	19.7	17.5	18.1	11.2	18.8	18.5	19.3	21.5	30.6	58.1	77.9	75.6	82.5	83.0	75.9	73.5	84.0	82.2	58.9	72.4	77.5
19	47.2	68.8	64.7	63.6	73.4	75.6	83.3	73.2	71.0	48.2	72.5	84.5	65.2	46.6	39.1	51.1	50.3	52.1	46.5	62.7	52.8	78.5	62.9	98.1
20	93.5	115.2	98.2	97.6	109.9	78.3	105.9	88.9	61.5	47.0	45.7	51.6	45.2	44.0	47.1	44.4	44.9	44.3	74.7	49.2	84.1	98.6	111.9	97.6
21	97.6	97.6	97.6	97.6	97.6	97.6	97.6	76.8	93.4	75.4	62.2	63.3	51.0	41.1	55.1	53.9	70.7	66.5	34.5	104.3	96.1	67.7	70.7	72.0
22	96.0	62.0	26.3	19.0	18.6	16.1	16.6	17.7	19.9	27.0	26.8	35.3	44.9	37.4	30.8	35.5	26.4	22.0	17.4	17.7	17.7	17.9	60.3	25.9
23	43.5	41.8	54.8	64.3	66.8	48.8	87.1	56.6	19.6	23.6	33.7	54.3	63.7	57.0	72.0	76.7	66.3	76.7	81.9	27.0	34.6	26.3	17.6	25.4
24	19.2	16.5	24.5	18.7	17.4	17.9	16.3	18.7	19.2	19.4	19.3	24.2	38.5	40.4	31.8	29.8	26.2	28.1	49.2	18.3	18.0	53.2	25.9	26.9
25	28.9	18.2	34.8	28.7	57.7	37.8	40.1	25.2	17.4	43.8	43.0	61.1	51.1	50.7	58.2	46.2	40.5	27.8	19.6	21.0	17.1	16.9	16.6	24.3
26	57.5	32.0	23.1	77.9	50.7	85.8	55.0	27.4	29.6	23.4	31.4	54.0	47.8	51.4	46.3	38.0	36.7	40.4	24.6	45.6	38.2	35.6	52.3	25.7
27	40.0	21.9	19.6	23.5	22.0	23.2	19.6	17.0	20.7	26.4	42.6	44.8	47.4	52.5	44.3	76.3	49.5	28.4	23.6	15.8	15.5	16.8	43.7	38.0
28	35.5	44.4	49.8	27.3	27.4	23.2	28.7	25.2	16.4	33.9	38.3	40.4	47.4	50.4	46.7	39.7	27.6	21.0	17.0	14.4	20.5	30.7	58.7	32.5
29	40.1	41.8	28.4	31.8	21.8	23.0	29.0	26.9	21.0	21.3	17.0	21.9	29.7	38.8	37.3	40.8	22.7	27.1	19.7	31.1	40.8	40.5	16.6	16.4
30	20.2	22.1	24.6	24.9	26.3	65.2	57.6	57.5	50.7	57.8	55.6	62.7	69.9	76.1	75.2	58.8	40.0	24.7	54.5	78.5	57.0	38.3	32.6	38.2
31	41.7	29.2	35.2	30.6	38.2	28.1	37.9	46.2	24.2	40.6	67.4	71.4	68.1	73.5	79.4	71.2	53.4	68.7	90.9	38.6	50.0	57.7	110.7	78.3

Table 3-3. Sigma Theta Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 TEMP (DEG F) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	68.2	67.7	67.6	66.9	66.1	66.3	65.9	65.8	66.7	69.4	72.2	71.1	73.7	74.9	76.7	76.5	76.8	70.6	68.9	68.4	68.0	67.2	66.7	67.4
2	66.0	65.7	65.5	65.3	64.6	64.9	65.3	74.1	75.2	77.1	79.2	79.2	79.2	77.5	76.7	75.9	74.6	73.0	72.1	72.1	72.0	72.0	71.7	71.6
3	70.9	70.2	69.8	69.5	69.6	69.4	69.7	70.9	72.7	73.0	75.4	76.7	75.2	75.3	75.7	73.8	73.3	73.0	72.3	72.0	71.4	70.7	70.3	70.5
4	70.3	69.9	69.9	69.8	69.5	69.3	69.0	70.4	73.3	74.8	75.3	73.6	72.8	73.7	73.9	74.2	74.3	71.8	70.7	69.9	68.7	68.5	68.1	67.6
5	67.6	67.0	67.3	67.4	67.5	67.6	67.8	69.1	71.6	73.0	74.8	76.4	76.8	76.3	75.8	76.8	73.7	71.2	69.5	69.0	68.5	68.5	68.5	68.2
6	67.8	67.9	67.9	67.9	67.8	67.4	67.0	68.9	73.9	74.7	77.1	77.5	76.7	77.5	76.7	74.4	74.5	71.9	70.3	70.3	69.4	68.8	68.6	69.1
7	69.0	67.7	68.2	67.5	67.6	67.2	67.3	69.4	70.5	70.5	70.9	71.1	70.9	72.5	72.0	72.7	75.4	71.6	69.9	68.5	67.8	67.6	67.6	67.9
8	67.1	66.2	65.9	66.1	66.6	67.2	67.7	69.3	74.2	74.6	75.3	78.2	77.7	78.0	77.5	77.0	75.8	72.2	68.7	67.6	67.2	66.7	67.1	66.5
9	66.1	65.6	65.8	65.8	64.2	64.7	65.4	68.2	70.2	72.8	75.9	76.9	77.4	77.1	76.8	75.1	75.7	71.9	67.7	66.6	65.2	65.0	66.2	66.1
10	66.5	66.3	65.6	64.9	64.9	64.9	65.4	67.5	70.9	72.1	73.7	74.5	73.7	72.1	73.8	72.7	73.1	69.8	68.5	68.0	67.7	67.5	67.2	67.2
11	67.1	67.0	67.4	67.5	67.7	67.9	67.6	69.3	69.7	71.8	71.7	73.1	72.0	69.4	69.9	69.3	70.2	70.4	69.4	69.1	68.9	68.9	68.4	68.3
12	68.4	67.8	67.6	67.5	67.4	67.2	67.2	68.0	69.4	71.5	74.3	73.9	76.4	76.4	75.5	76.0	74.2	71.0	69.6	69.1	67.6	66.5	66.9	66.7
13	66.7	66.7	66.9	67.1	67.0	67.2	66.9	68.5	72.6	73.5	74.9	75.8	76.2	76.8	76.7	74.5	73.4	70.9	67.9	67.5	67.5	67.2	67.4	67.6
14	67.4	67.5	67.5	67.0	67.0	66.8	67.6	70.1	71.6	73.3	74.5	74.6	74.9	75.2	75.1	74.1	71.7	71.2	70.3	70.0	69.7	69.3	69.0	68.6
15	68.2	67.9	67.8	67.9	67.6	67.6	67.7	70.4	72.4	73.5	75.3	76.4	77.1	77.4	76.3	75.4	73.8	72.5	71.2	70.5	70.4	70.1	69.2	69.3
16	69.3	69.4	69.4	69.8	70.0	70.1	70.0	70.1	71.2	74.2	76.4	78.4	76.6	75.7	73.6	73.0	72.1	71.8	71.2	70.9	70.5	68.9	68.5	68.7
17	68.7	68.7	68.4	68.5	68.7	68.9	69.1	69.4	69.9	71.2	72.1	72.7	75.6	76.6	76.4	74.4	73.1	71.6	70.6	70.5	70.8	71.0	71.0	70.9
18	70.6	70.3	69.9	69.9	69.7	69.1	68.2	69.0	70.3	71.7	72.4	73.8	75.6	76.0	76.0	75.0	73.3	71.5	71.2	71.2	71.2	71.2	71.5	71.4
19	71.5	71.0	71.2	69.9	69.4	69.2	69.3	69.8	70.8	71.0	71.6	75.5	76.4	76.4	74.7	74.0	72.4	72.3	72.0	71.8	72.0	72.1	72.0	71.0
20	71.0	71.1	70.7	70.5	70.2	69.5	69.2	71.1	74.9	75.8	76.6	79.1	77.9	78.4	78.5	79.0	77.4	72.8	70.8	70.2	69.4	69.1	68.5	68.1
21	67.8	67.3	67.3	66.7	66.3	66.1	66.1	68.5	72.4	75.1	77.8	78.5	79.3	78.8	78.4	77.2	77.5	72.4	70.6	69.5	69.8	70.3	69.9	69.4
22	68.5	68.3	68.1	68.0	67.9	67.7	67.8	70.0	72.9	74.1	75.4	76.6	76.6	75.8	74.7	75.7	73.2	71.1	69.5	69.4	69.4	68.7	68.1	67.6
23	66.6	66.2	66.5	66.7	66.5	66.7	66.8	72.8	74.6	75.7	77.0	78.1	78.2	77.8	78.4	75.9	73.4	71.3	70.2	69.2	69.1	68.1	67.6	67.3
24	67.2	66.8	66.7	66.3	66.3	66.4	66.3	68.8	70.6	69.4	71.7	72.8	75.1	74.9	74.1	73.0	72.1	69.9	67.8	67.4	67.5	67.1	66.6	66.7
25	67.1	66.9	66.4	66.5	66.4	66.3	66.3	68.1	68.6	70.2	72.5	74.6	75.0	75.2	75.4	74.2	73.0	70.0	69.0	67.9	67.5	67.6	67.7	67.3
26	66.6	66.3	66.5	65.8	65.4	66.0	65.9	67.9	69.4	72.1	74.5	75.3	75.4	75.5	74.9	74.5	73.0	70.0	68.5	68.3	68.2	67.9	67.6	67.0
27	66.7	67.0	66.5	66.0	66.0	65.6	65.6	68.3	72.4	72.8	73.8	76.0	76.1	76.4	74.6	72.8	68.3	68.5	67.5	66.8	66.5	66.6	65.9	64.7
28	65.2	64.1	63.7	63.5	63.7	64.0	64.0	68.7	72.1	73.5	73.4	74.6	75.1	75.4	73.9	73.6	72.0	69.1	67.9	67.1	66.9	65.2	65.2	64.9
29	64.6	64.2	64.7	65.0	65.5	65.3	65.5	66.6	67.3	69.1	69.9	72.5	74.8	74.8	74.3	72.7	70.4	69.1	67.1	67.8	68.3	66.8	66.3	66.2
30	66.1	66.3	66.7	66.9	67.1	67.1	67.0	68.5	69.9	71.3	72.7	73.9	74.8	74.8	76.2	71.5	74.2	70.1	68.3	67.5	67.6	67.0	67.3	67.6
31	67.3	66.3	65.8	66.2	66.2	65.7	65.7	69.4	72.7	74.8	76.7	76.6	77.6	78.0	78.5	76.5	72.8	68.7	66.7	66.1	66.7	67.4	67.6	68.8

Table 3-4. Ambient Temperature Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 RAIN (INCH) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.00	0.00	0.00	0.00	0.28	0.00	0.01	0.15	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.02	0.07	0.00	0.00	0.00	0.01
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.00
3	0.08	0.31	0.03	0.01	0.00	0.14	0.07	0.03	0.04	0.14	0.01	0.02	0.04	0.02	0.01	0.02	0.01	0.00	0.14	0.02	0.00	0.09	0.15	0.29
4	0.08	0.03	0.03	0.00	0.01	0.14	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.20
5	0.22	0.02	0.10	0.42	0.34	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.00
9	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.10	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.09	0.01	0.30	0.06	0.10	0.25	0.20
11	0.04	0.03	0.02	0.00	0.06	0.03	0.04	0.02	0.12	0.00	0.02	0.02	0.02	0.07	0.07	0.24	0.06	0.02	0.00	0.01	0.00	0.00	0.00	0.00
12	0.01	0.02	0.00	0.01	0.00	0.01	0.06	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.10	0.03	0.06
13	0.03	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.01	0.01	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.13	0.03	0.01
15	0.02	0.03	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
16	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.07	0.31	0.00	0.00	0.00	0.02	0.01	0.06	0.04	0.12	0.00	0.00	0.03	0.02	0.01	0.01	0.00
17	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.06	0.07	0.03	0.08	0.04	0.00	0.00	0.00	0.00	0.01	0.02	0.15	0.02	0.00	0.00	0.00	0.02
18	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.03	0.14	0.04	0.02	0.00	0.15	0.14	0.17
19	0.02	0.43	0.07	0.29	0.32	0.21	0.03	0.39	0.23	0.13	0.29	0.03	0.01	0.00	0.01	0.00	0.03	0.01	0.00	0.04	0.05	0.06	0.02	0.02
20	0.00	0.00	0.07	0.00	0.01	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04	0.07
23	0.01	0.12	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.08	0.03	0.01	0.00
24	0.00	0.00	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.05	0.02	0.00	0.01
25	0.00	0.10	0.00	0.03	0.04	0.03	0.06	0.02	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00
28	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.05	0.01
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.14	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.04	0.01	0.00	0.02	0.07
30	0.05	0.05	0.11	0.15	0.40	0.66	0.90	0.14	0.04	0.10	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.03	0.02	0.00	0.00
31	0.00	0.00	0.00	0.00	0.01	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.06	0.10	0.03

Table 3-5. Precipitation Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 SO2 (PPB) DATA FOR: OCT 1990

HOURS (AST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	----	----	0	0	0	0	0	0	0
2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-6. Sulfur Dioxide Monthly Summary Site 1

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 1 H2S (PPB) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
9	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	----	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	----	0	1	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	1	----	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0
27	0	1	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0
28	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	1
29	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	----	----	----	0	0	0	0	0	0	0	1	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	1	1	----	----	----	----	----	----	----	----	----	----	----

Table 3-7. Hydrogen Sulfide Monthly Summary Site 1

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

HECO ENVIRONMENTAL LABORATORY
ENVIRONMENTAL DEPARTMENT
Rainwater Analysis Report

Report Date: November 23, 1990

Site: True/Geothermal
Pahoa, Hawaii

Sample Date: 10/01/90 - 11/01/90
(Received 11/08/90)

Parameter	Conc. (ug/l) True 15(1-3)
pH	4.45
Aluminum	<10.0
Arsenic	<5.0
Barium	<20.0
Cadmium	<1.0
Chromium	<4.0
Copper	<10.0
Iron	<10.0
Lead	<5.0
Magnesium	203
Manganese	<2.0
Mercury	<0.50
Selenium	<5.0
Silver	<2.0
Sodium	1,490
Zinc	<10.0
Bromide	<10
Chloride	3,660
Fluoride	54
Phosphate	<3
Nitrite	<4
Nitrate	<2
Sulfate	3,240
Sulfite	<150

Analyzed by: GK
G. Kitsuwa/E. Wong

Approved by: _____
George Yasutome
Senior Chemist

Table 3-8. Rain Water Analyses Monthly Summary Site 1
10/01/90-11/01/90

295/01-013 PROTOCOL: 5 SA

SAMPLE ID: M1625
PARTICLE SIZE: T
ANALYSIS ID: M1625
10/02/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 7.+- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000+-	.0046	.000+-	.059	.0000+-	.8411
SI	.0197+-	.0040	.252+-	.051	3.6023+-	5.1978
P	.0000+-	.0017	.000+-	.022	.0000+-	.3109
S	.0427+-	.0079	.547+-	.101	7.8080+-	11.2474
CL	.3780+-	.0429	4.838+-	.549	69.1200+-	99.0540
K	.0141+-	.0023	.180+-	.029	2.5783+-	3.7072
CA	.0144+-	.0021	.184+-	.027	2.6331+-	3.7812
TI	.0000+-	.0006	.000+-	.008	.0000+-	.1097
V	.0000+-	.0004	.000+-	.005	.0000+-	.0731
CR	.0006+-	.0004	.008+-	.005	.1097+-	.1730
MN	.0000+-	.0004	.000+-	.005	.0000+-	.0731
FE	.0173+-	.0014	.221+-	.018	3.1634+-	4.5264
NI	.0000+-	.0005	.000+-	.006	.0000+-	.0914
CU	.0067+-	.0006	.086+-	.008	1.2251+-	1.7536
ZN	.0033+-	.0005	.042+-	.006	.6034+-	.8669
GA	.0000+-	.0004	.000+-	.005	.0000+-	.0731
AS	.0000+-	.0010	.000+-	.013	.0000+-	.1829
SE	.0000+-	.0004	.000+-	.005	.0000+-	.0731
BR	.0010+-	.0005	.013+-	.006	.1829+-	.2768
RB	.0000+-	.0006	.000+-	.008	.0000+-	.1097
SR	.0000+-	.0007	.000+-	.009	.0000+-	.1280
Y	.0007+-	.0008	.009+-	.010	.1280+-	.2342
ZR	.0000+-	.0013	.000+-	.017	.0000+-	.2377
MO	.0000+-	.0016	.000+-	.020	.0000+-	.2926
PD	.0030+-	.0029	.038+-	.037	.5486+-	.9462
AG	.0000+-	.0039	.000+-	.050	.0000+-	.7131
CD	.0038+-	.0049	.049+-	.063	.6949+-	1.3372
IN	.0041+-	.0060	.052+-	.077	.7497+-	1.5332
SN	.0000+-	.0074	.000+-	.095	.0000+-	1.3531
SB	.0000+-	.0092	.000+-	.118	.0000+-	1.6823
BA	.0000+-	.0350	.000+-	.448	.0000+-	6.4000
LA	.0000+-	.0467	.000+-	.598	.0000+-	8.5394
HG	.0000+-	.0007	.000+-	.009	.0000+-	.1280
PB	.0034+-	.0017	.044+-	.022	.6217+-	.9410

Table 3-9. Metals Filter Analyses October 2, 1990 Site 1

295/01-013 PROTOCOL: 5 SA

SAMPLE ID: M1626
PARTICLE SIZE: T
ANALYSIS ID: M1626
10/08/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 5.+- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0134+-	.0046	.172+-	.059	3.4304+-	6.9611
SI	.0163+-	.0034	.209+-	.044	4.1728+-	8.3909
P	.0000+-	.0015	.000+-	.019	.0000+-	.3840
S	.0416+-	.0073	.532+-	.093	10.6496+-	21.3810
CL	.3123+-	.0355	3.997+-	.454	79.9488+-	160.512
K	.0113+-	.0020	.145+-	.026	2.8928+-	5.8082
CA	.0101+-	.0016	.129+-	.020	2.5856+-	5.1874
TI	.0000+-	.0005	.000+-	.006	.0000+-	.1280
V	.0000+-	.0004	.000+-	.005	.0000+-	.1024
CR	.0007+-	.0004	.009+-	.005	.1792+-	.3727
MN	.0000+-	.0004	.000+-	.005	.0000+-	.1024
FE	.0152+-	.0013	.195+-	.017	3.8912+-	7.7895
NI	.0000+-	.0005	.000+-	.006	.0000+-	.1280
CU	.0064+-	.0006	.082+-	.008	1.6384+-	3.2804
ZN	.0015+-	.0004	.019+-	.005	.3840+-	.7748
GA	.0000+-	.0003	.000+-	.004	.0000+-	.0768
AS	.0004+-	.0009	.005+-	.012	.1024+-	.3083
SE	.0000+-	.0004	.000+-	.005	.0000+-	.1024
BR	.0000+-	.0005	.000+-	.006	.0000+-	.1280
RB	.0001+-	.0006	.001+-	.008	.0256+-	.1619
SR	.0000+-	.0007	.000+-	.009	.0000+-	.1792
Y	.0009+-	.0007	.012+-	.009	.2304+-	.4944
ZR	.0000+-	.0011	.000+-	.014	.0000+-	.2816
MO	.0012+-	.0015	.015+-	.019	.3072+-	.7245
PD	.0000+-	.0027	.000+-	.035	.0000+-	.6912
AG	.0000+-	.0036	.000+-	.046	.0000+-	.9216
CD	.0000+-	.0046	.000+-	.059	.0000+-	1.1776
IN	.0000+-	.0057	.000+-	.073	.0000+-	1.4592
SN	.0018+-	.0072	.023+-	.092	.4608+-	2.0608
SB	.0000+-	.0090	.000+-	.115	.0000+-	2.3040
BA	.0000+-	.0329	.000+-	.421	.0000+-	8.4224
LA	.0422+-	.0445	.540+-	.570	10.8032+-	24.4257
HG	.0000+-	.0006	.000+-	.008	.0000+-	.1536
PB	.0000+-	.0016	.000+-	.020	.0000+-	.4096

Table 3-10. Metals Filter Analyses October 8, 1990 Site 1

295/01-013 PROTOCOL: 5 SA

SAMPLE ID: M1627
PARTICLE SIZE: T
ANALYSIS ID: M1627
10/14/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 5.+- 10. MICROGRAMS

ELEMENT	UG/CM2		UG/FILTER		PERCENT	
AL	.0000+-	.0043	.000+-	.055	.0000+-	1.1008
SI	.0061+-	.0029	.078+-	.037	1.5616+-	3.2102
P	.0000+-	.0015	.000+-	.019	.0000+-	.3840
S	.0231+-	.0063	.296+-	.081	5.9136+-	11.9367
CL	.2467+-	.0283	3.158+-	.362	63.1552+-	127.480
K	.0106+-	.0020	.136+-	.026	2.7136+-	5.4513
CA	.0093+-	.0015	.119+-	.019	2.3808+-	4.7771
TI	.0008+-	.0005	.010+-	.006	.2048+-	.4291
V	.0000+-	.0004	.000+-	.005	.0000+-	.1024
CR	.0008+-	.0004	.010+-	.005	.2048+-	.4222
MN	.0002+-	.0004	.003+-	.005	.0512+-	.1448
FE	.0168+-	.0013	.215+-	.017	4.3008+-	8.6080
NI	.0000+-	.0005	.000+-	.006	.0000+-	.1280
CU	.0027+-	.0005	.035+-	.006	.6912+-	1.3883
ZN	.0009+-	.0004	.012+-	.005	.2304+-	.4720
GA	.0000+-	.0003	.000+-	.004	.0000+-	.0768
AS	.0003+-	.0009	.004+-	.012	.0768+-	.2769
SE	.0000+-	.0004	.000+-	.005	.0000+-	.1024
BR	.0010+-	.0004	.013+-	.005	.2560+-	.5221
RB	.0000+-	.0006	.000+-	.008	.0000+-	.1536
SR	.0000+-	.0007	.000+-	.009	.0000+-	.1792
Y	.0000+-	.0008	.000+-	.010	.0000+-	.2048
ZR	.0000+-	.0012	.000+-	.015	.0000+-	.3072
MO	.0000+-	.0015	.000+-	.019	.0000+-	.3840
PD	.0000+-	.0027	.000+-	.035	.0000+-	.6912
AG	.0000+-	.0037	.000+-	.047	.0000+-	.9472
CD	.0027+-	.0046	.035+-	.059	.6912+-	1.8160
IN	.0000+-	.0058	.000+-	.074	.0000+-	1.4848
SN	.0140+-	.0072	.179+-	.092	3.5840+-	7.4012
SB	.0111+-	.0090	.142+-	.115	2.8416+-	6.1325
BA	.0439+-	.0334	.562+-	.428	11.2384+-	24.0482
LA	.0000+-	.0450	.000+-	.576	.0000+-	11.5200
HG	.0007+-	.0007	.009+-	.009	.1792+-	.4007
PB	.0003+-	.0016	.004+-	.020	.0768+-	.4375

Table 3-11. Metals Filter Analyses October 14, 1990 Site 1

295/01-013 PROTOCOL: 5 SA

SAMPLE ID: M1628
PARTICLE SIZE: T
ANALYSIS ID: M1628
10/20/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 13.+- 10. MICROGRAMS

ELEMENT	UG/CM2	UG/FILTER	PERCENT
AL	.0000+- .0045	.000+- .058	.0000+- .4431
SI	.0000+- .0028	.000+- .036	.0000+- .2757
P	.0000+- .0016	.000+- .020	.0000+- .1575
S	.0309+- .0070	.396+- .090	3.0425+- 2.4397
CL	.3444+- .0391	4.408+- .500	33.9102+-26.3673
K	.0122+- .0021	.156+- .027	1.2012+- .9469
CA	.0111+- .0017	.142+- .022	1.0929+- .8572
TI	.0013+- .0006	.017+- .008	.1280+- .1148
V	.0000+- .0004	.000+- .005	.0000+- .0394
CR	.0010+- .0004	.013+- .005	.0985+- .0854
MN	.0000+- .0004	.000+- .005	.0000+- .0394
FE	.0155+- .0013	.198+- .017	1.5262+- 1.1809
NI	.0003+- .0005	.004+- .006	.0295+- .0542
CU	.0080+- .0007	.102+- .009	.7877+- .6098
ZN	.0019+- .0004	.024+- .005	.1871+- .1492
GA	.0003+- .0004	.004+- .005	.0295+- .0455
AS	.0004+- .0009	.005+- .012	.0394+- .0937
SE	.0000+- .0004	.000+- .005	.0000+- .0394
BR	.0000+- .0005	.000+- .006	.0000+- .0492
RB	.0000+- .0006	.000+- .008	.0000+- .0591
SR	.0000+- .0007	.000+- .009	.0000+- .0689
Y	.0000+- .0008	.000+- .010	.0000+- .0788
ZR	.0000+- .0011	.000+- .014	.0000+- .1083
MO	.0000+- .0015	.000+- .019	.0000+- .1477
PD	.0033+- .0028	.042+- .036	.3249+- .3721
AG	.0027+- .0038	.035+- .049	.2658+- .4264
CD	.0000+- .0048	.000+- .061	.0000+- .4726
IN	.0000+- .0060	.000+- .077	.0000+- .5908
SN	.0030+- .0075	.038+- .096	.2954+- .7726
SB	.0007+- .0094	.009+- .120	.0689+- .9271
BA	.0000+- .0342	.000+- .438	.0000+- 3.3674
LA	.0000+- .0461	.000+- .590	.0000+- 4.5391
HG	.0000+- .0006	.000+- .008	.0000+- .0591
PB	.0008+- .0016	.010+- .020	.0788+- .1688

Table 3-12. Metals Filter Analyses October 20, 1990 Site 1

295/01-013 PROTOCOL: 5 SA

SAMPLE ID: M1629
PARTICLE SIZE: T
ANALYSIS ID: M1629
10/26/90
EXPOSED AREA: 12.80 SQUARE CM
MASS OF DEPOSIT: 3.+- 10. MICROGRAMS

ELEMENT	UG/CM2	UG/FILTER	PERCENT
AL	.0060+- .0040	.077+- .051	2.5600+- 8.7023
SI	.0114+- .0030	.146+- .038	4.8640+-16.2638
P	.0000+- .0014	.000+- .018	.0000+- .5973
S	.0288+- .0060	.369+- .077	12.2880+-41.0399
CL	.1613+- .0188	2.065+- .241	68.8213+-221.852
K	.0089+- .0017	.114+- .022	3.7973+-12.6785
CA	.0067+- .0013	.086+- .017	2.8587+- 9.5450
TI	.0006+- .0005	.008+- .006	.2560+- .8796
V	.0007+- .0004	.009+- .005	.2987+- 1.0101
CR	.0006+- .0003	.008+- .004	.2560+- .8629
MN	.0000+- .0003	.000+- .004	.0000+- .1280
FE	.0149+- .0012	.191+- .015	6.3573+-21.1973
NI	.0004+- .0004	.005+- .005	.1707+- .5939
CU	.0090+- .0007	.115+- .009	3.8400+-12.8035
ZN	.0022+- .0004	.028+- .005	.9387+- 3.1335
GA	.0003+- .0003	.004+- .004	.1280+- .4455
AS	.0000+- .0008	.000+- .010	.0000+- .3413
SE	.0000+- .0004	.000+- .005	.0000+- .1707
BR	.0000+- .0004	.000+- .005	.0000+- .1707
RB	.0000+- .0006	.000+- .008	.0000+- .2560
SR	.0000+- .0006	.000+- .008	.0000+- .2560
Y	.0002+- .0007	.003+- .009	.0853+- .4124
ZR	.0000+- .0011	.000+- .014	.0000+- .4693
MO	.0000+- .0014	.000+- .018	.0000+- .5973
PD	.0000+- .0026	.000+- .033	.0000+- 1.1093
AG	.0000+- .0036	.000+- .046	.0000+- 1.5360
CD	.0060+- .0043	.077+- .055	2.5600+- 8.7283
IN	.0000+- .0054	.000+- .069	.0000+- 2.3040
SN	.0000+- .0071	.000+- .091	.0000+- 3.0293
SB	.0000+- .0086	.000+- .110	.0000+- 3.6693
BA	.0021+- .0316	.027+- .404	.8960+-13.8095
LA	.0000+- .0428	.000+- .548	.0000+-18.2613
HG	.0000+- .0006	.000+- .008	.0000+- .2560
PB	.0000+- .0015	.000+- .019	.0000+- .6400

Table 3-13. Metals Filter Analyses October 26 1990 Site 1

MEASUREMENT TECHNOLOGIES

8" X 10" FILTER GRAVIMETRIC REPORT

Run Day	NEA ID.	FILTER TYPE	TARE WT. GRAMS	GROSS WT. GRAMS	NET WT. MILLIGRAMS
10/02/90	M1865	TSP	4.4576	4.4789	21.30
10/02/90	M1866	PM-10	4.4639	4.4824	.18.50
10/08/90	M1867	TSP	4.4913	4.5124	21.10
10/08/90	M1868	PM-10	4.5023	4.5198	17.50
10/14/90	M1869	TSP	4.4838	4.4988	15.00
10/14/90	M1870	PM-10	4.4489	4.4627	13.80
10/20/90	M1871	TSP	4.4623	4.4833	21.00
10/20/90	M1872	PM-10	4.4542	4.4727	18.50
10/26/90	M1873	TSP	4.4128	4.4288	16.00
10/26/90	M1874	PM-10	4.3846	4.3968	12.20

Table 3-14. Total Suspended Particulates (TSP) and Inhaleable Particulates (PM-10) Loading Monthly Summary Site 1

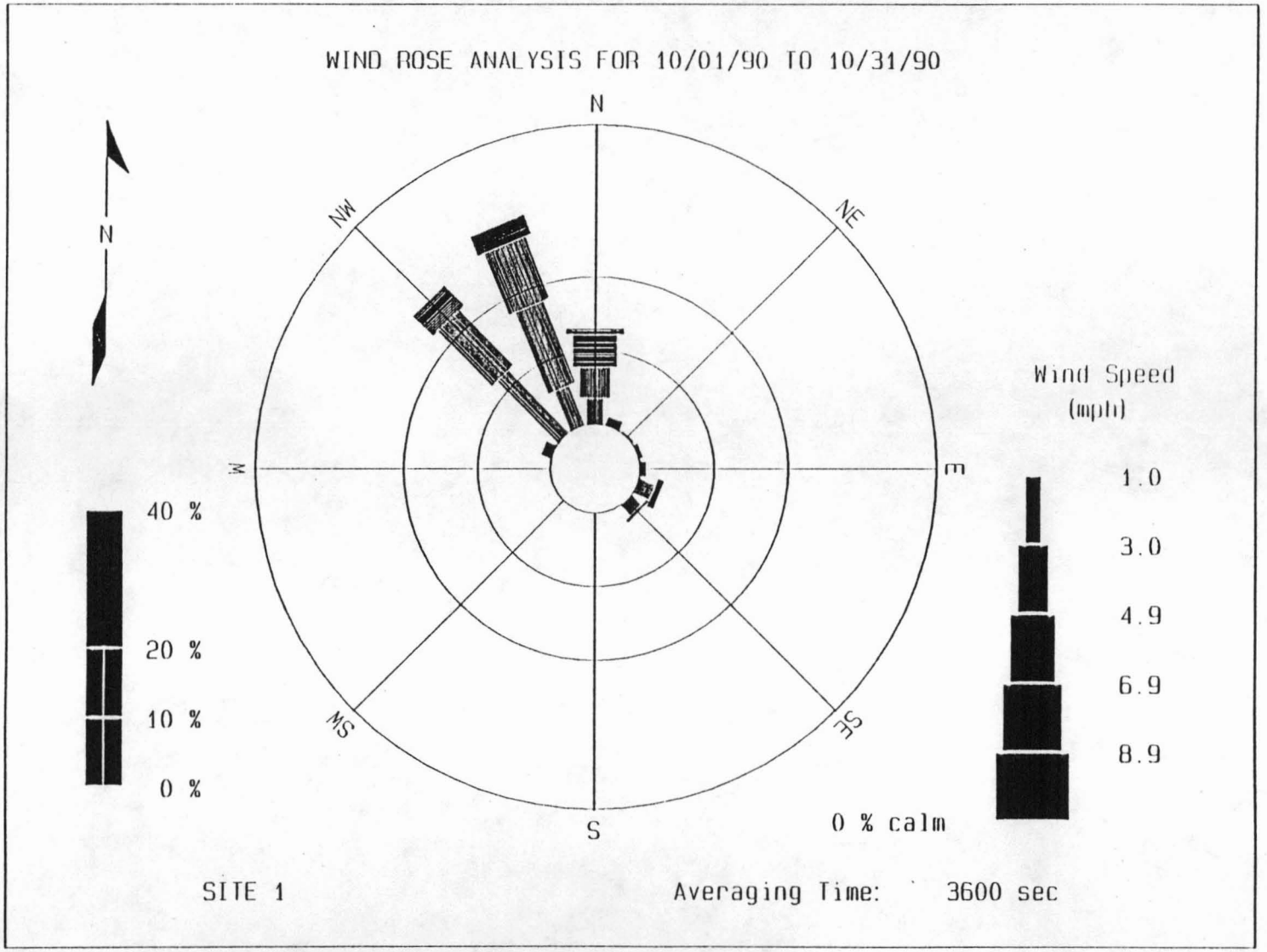

Figure 3-1. Wind Rose Analysis Site 1

WD (DEG) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	360.	10/11/90	10:00:00		
Second Highest:	359.	10/06/90	12:00:00		
Lowest Value:	0.	10/01/90	18:00:00		
Arithmetic Mean:	276.		10.000	Percentile:	90.
Standard Deviation:	106.		20.000	Percentile:	180.
			30.000	Percentile:	305.
Geometric Mean:	208.		40.000	Percentile:	314.
Standard Deviation:	3.		50.000	Percentile:	321.
			60.000	Percentile:	327.
Valid Data:	744		70.000	Percentile:	338.
Invalid Data:	0		80.000	Percentile:	346.
Missing Data:	0		90.000	Percentile:	349.
Data Recovery:	100.00%		100.000	Percentile:	360.

SITE 1 Averaging Time: 3600 sec

Table 3-15. Wind Direction Summary Statistics Site 1

WS (MPH) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	8.9	10/10/90	11:00:00		
Second Highest:	8.6	10/10/90	15:00:00		
Lowest Value:	0.0	10/01/90	18:00:00		
Arithmetic Mean:	3.0		10.000	Percentile:	0.3
Standard Deviation:	2.1		20.000	Percentile:	0.9
			30.000	Percentile:	1.4
Geometric Mean:	2.1		40.000	Percentile:	2.0
Standard Deviation:	2.8		50.000	Percentile:	2.8
			60.000	Percentile:	3.6
Valid Data:	744		70.000	Percentile:	4.3
Invalid Data:	0		80.000	Percentile:	5.0
Missing Data:	0		90.000	Percentile:	5.9
Data Recovery:	100.00%		100.000	Percentile:	8.9

SITE 1 Averaging Time: 3600 sec

Table 3-16. Wind Speed Summary Statistics Site 1

Sigθ1 (deg) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	122.9	10/02/90	01:00:00		
Second Highest:	115.2	10/20/90	01:00:00		
Lowest Value:	11.2	10/18/90	06:00:00		
Arithmetic Mean:	41.8			10.000 Percentile:	17.7
Standard Deviation:	23.4			20.000 Percentile:	19.9
				30.000 Percentile:	24.5
Geometric Mean:	36.0			40.000 Percentile:	28.6
Standard Deviation:	1.7			50.000 Percentile:	35.5
				60.000 Percentile:	42.6
Valid Data:	744			70.000 Percentile:	49.9
Invalid Data:	0			80.000 Percentile:	62.7
Missing Data:	0			90.000 Percentile:	77.5
Data Recovery:	100.00%			100.000 Percentile:	122.9

SITE 1 Averaging Time: 3600 sec

Table 3-17. Sigma Theta Summary Statistics Site 1

TEMP (DEG F) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	79.3	10/21/90	12:00:00		
Second Highest:	79.2	10/02/90	10:00:00		
Lowest Value:	63.5	10/28/90	03:00:00		
Arithmetic Mean:	70.5			10.000 Percentile:	66.3
Standard Deviation:	3.7			20.000 Percentile:	67.2
				30.000 Percentile:	67.8
Geometric Mean:	70.4			40.000 Percentile:	68.8
Standard Deviation:	1.1			50.000 Percentile:	69.9
				60.000 Percentile:	71.0
Valid Data:	744			70.000 Percentile:	72.5
Invalid Data:	0			80.000 Percentile:	74.4
Missing Data:	0			90.000 Percentile:	76.0
Data Recovery:	100.00%			100.000 Percentile:	79.3

SITE 1 Averaging Time: 3600 sec

Table 3-18 Ambient Temperature Summary Statistics Site 1

RAIN (INCH) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	0.90	10/30/90	06:00:00
Second Highest:	0.66	10/30/90	05:00:00
Lowest Value:	0.00	10/01/90	00:00:00

Arithmetic Mean:	0.02	10.000 Percentile:	0.00
Standard Deviation:	0.07	20.000 Percentile:	0.00
		30.000 Percentile:	0.00
Geometric Mean:	0.00	40.000 Percentile:	0.00
Standard Deviation:	1.00	50.000 Percentile:	0.00
		60.000 Percentile:	0.00
Valid Data:	744	70.000 Percentile:	0.01
Invalid Data:	0	80.000 Percentile:	0.02
Missing Data:	0	90.000 Percentile:	0.06
Data Recovery:	100.00%	100.000 Percentile:	0.90

SITE 1 Averaging Time: 3600 sec

Table 3-19. Precipitation Summary Statistics Site 1

SO2 (PPB) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	1.	10/02/90	06:00:00
Second Highest:	1.	10/21/90	06:00:00
Lowest Value:	0.	10/01/90	00:00:00

Arithmetic Mean:	0.	10.000 Percentile:	0.
Standard Deviation:	0.	20.000 Percentile:	0.
		30.000 Percentile:	0.
Geometric Mean:	0.	40.000 Percentile:	0.
Standard Deviation:	1.	50.000 Percentile:	0.
		60.000 Percentile:	0.
Valid Data:	742	70.000 Percentile:	0.
Invalid Data:	2	80.000 Percentile:	0.
Missing Data:	0	90.000 Percentile:	0.
Data Recovery:	99.73%	100.000 Percentile:	1.

SITE 1 Averaging Time: 3600 sec

Table 3-20. Sulfur Dioxide Summary Statistics Site 1

H2S (PPB) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	1.	10/28/90	06:00:00		
Second Highest:	1.	10/01/90	07:00:00		
Lowest Value:	0.	10/01/90	00:00:00		
Arithmetic Mean:	0.		10.000	Percentile:	0.
Standard Deviation:	0.		20.000	Percentile:	0.
			30.000	Percentile:	0.
Geometric Mean:	0.		40.000	Percentile:	0.
Standard Deviation:	1.		50.000	Percentile:	0.
			60.000	Percentile:	0.
Valid Data:	725		70.000	Percentile:	0.
Invalid Data:	19		80.000	Percentile:	0.
Missing Data:	0		90.000	Percentile:	0.
Data Recovery:	97.45%		100.000	Percentile:	1.

SITE 1 Averaging Time: 3600 sec

Table 3-21. Hydrogen Sulfide Summary Statistics Site 1

3.2 Meteorological Monitoring Data Site 2

MONTHLY SUMMARY REPORT

LOCATION: SITE 2, MET WD TRUE GEOTHERMAL (DEG) DATA FOR: OCT 1990

HR-END DAY	HOURS (HST) 01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	329	326	323	328	311	308	308	305	304	338	354	330	328	18	55	40	55	44	324	70	309	292	303	309
2	281	272	298	305	286	296	292	323	339	27	50	57	58	60	62	68	55	36	25	21	27	6	46	5
3	310	333	308	300	304	298	305	355	0	355	79	96	91	82	90	74	57	31	37	43	3	349	60	25
4	346	328	329	359	335	13	338	336	347	6	19	18	21	26	23	17	9	3	346	340	336	328	343	310
5	307	308	311	314	321	319	321	329	340	349	352	12	15	34	42	28	25	20	357	354	345	344	346	339
6	335	328	332	329	333	332	324	329	346	355	20	43	43	52	58	58	54	43	37	34	337	314	315	327
7	330	313	329	316	323	310	313	334	355	343	339	5	336	359	15	0	28	32	2	312	317	319	304	322
8	311	299	300	303	308	327	316	320	18	42	71	71	77	80	71	63	57	38	34	351	347	305	306	302
9	304	302	305	319	296	304	307	317	325	341	19	38	44	46	40	44	35	33	31	344	328	322	323	321
10	336	324	325	5	339	327	332	332	344	351	1	8	15	15	16	9	2	11	343	340	342	341	350	353
11	354	355	6	10	43	33	42	33	33	45	39	39	15	30	34	56	38	15	8	19	15	7	359	352
12	345	339	336	333	338	340	340	337	346	16	14	8	27	30	35	30	24	16	2	3	350	324	319	308
13	309	313	317	319	320	321	321	317	341	348	354	23	29	37	37	23	359	331	331	328	327	324	328	331
14	332	331	331	329	324	319	321	330	340	355	352	356	1	21	37	20	18	8	354	1	354	342	350	337
15	336	330	333	331	327	331	328	332	343	356	18	27	14	4	2	10	14	356	349	352	350	324	326	315
16	303	301	300	332	339	317	310	312	37	49	66	65	50	51	67	66	72	53	358	340	334	321	318	330
17	330	337	333	339	339	334	328	20	342	351	12	4	29	42	40	35	29	38	36	52	62	67	61	60
18	51	40	2	352	339	328	324	319	324	329	339	14	31	54	70	66	57	72	75	74	71	96	81	91
19	113	96	56	270	290	254	313	107	45	345	301	80	99	99	105	109	113	113	111	113	136	126	131	150
20	176	133	161	98	124	122	217	270	112	100	101	107	100	110	99	101	109	116	122	122	115	140	149	208
21	226	238	234	237	266	258	262	258	43	75	92	99	102	104	94	88	81	66	34	0	0	59	63	66
22	46	13	344	340	342	337	335	331	345	355	12	5	22	20	20	16	5	2	342	334	339	343	329	315
23	293	301	291	285	288	288	289	306	342	359	8	34	50	52	65	56	52	50	52	14	355	10	326	316
24	323	323	315	327	324	330	331	339	345	338	348	346	9	28	10	21	13	12	22	349	340	34	329	317
25	326	342	318	316	327	331	316	351	349	27	19	45	40	43	39	35	34	9	352	346	334	334	340	340
26	321	324	315	304	311	306	294	315	315	328	11	17	28	37	36	34	33	35	352	347	20	352	333	318
27	329	326	324	315	318	314	319	332	344	4	19	13	28	33	37	44	1	8	3	339	334	336	322	303
28	315	296	302	309	310	316	313	323	352	20	16	34	44	29	33	25	9	347	336	325	337	306	313	300
29	302	300	311	312	322	315	318	328	320	313	332	349	3	9	24	32	4	337	317	357	35	3	325	323
30	314	316	308	312	314	305	56	103	96	94	90	80	74	64	48	40	31	17	345	315	337	306	310	309
31	319	310	307	324	313	308	326	301	325	35	52	73	58	62	61	77	89	296	0	299	290	284	278	93

Table 3-22. Wind Direction Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET WS (MPH) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	5.2	4.2	2.6	1.0	0.4	3.6	3.1	3.6	5.8	3.2	2.4	3.7	0.5	0.3	3.0	3.4	1.8	0.1	0.2	0.3	0.2	0.2	0.7	0.4
2	0.1	0.5	0.0	0.0	0.0	0.3	0.5	0.5	1.1	1.4	4.6	6.5	7.7	6.9	7.1	6.5	6.0	3.8	3.8	3.8	4.4	3.0	1.5	0.6
3	1.7	0.1	0.1	0.7	2.5	1.8	0.5	0.1	0.1	0.1	4.0	4.3	4.2	5.1	4.3	2.5	2.8	0.8	0.1	0.1	0.1	0.6	0.8	0.4
4	0.6	0.5	0.2	0.1	0.1	1.7	1.9	5.1	7.6	5.8	6.2	6.7	5.6	5.7	5.7	6.4	6.9	6.1	8.7	8.3	8.4	5.4	5.2	5.1
5	5.2	6.5	5.1	3.0	6.1	3.8	6.2	7.7	9.7	9.7	9.8	8.7	8.4	9.8	8.7	7.4	5.2	4.0	3.8	3.8	4.7	5.0	5.0	5.8
6	5.5	5.7	5.7	6.3	5.7	4.3	4.3	5.5	9.0	8.1	7.1	8.0	7.8	8.6	7.5	6.8	6.3	4.0	3.2	1.4	2.2	3.1	2.0	1.7
7	2.8	3.6	2.3	2.8	3.5	4.6	4.3	2.9	2.4	5.0	4.7	2.9	4.3	4.6	4.9	4.4	4.3	2.6	1.0	2.6	3.4	0.3	0.2	0.1
8	0.2	0.4	2.7	2.5	1.5	1.3	1.4	3.5	3.9	5.7	6.5	7.6	8.8	8.8	7.2	6.6	6.3	4.0	2.1	0.6	0.4	2.5	1.8	3.6
9	4.0	3.8	4.0	3.5	4.5	4.9	5.6	4.1	3.5	4.1	5.6	6.8	7.1	7.9	8.2	8.4	6.5	4.0	2.7	2.3	4.2	5.0	5.3	5.2
10	5.7	5.1	5.2	3.4	4.2	5.8	6.3	7.2	9.8	9.3	8.4	8.4	8.4	8.8	8.6	7.9	7.3	6.1	8.8	7.2	7.6	7.3	4.6	4.2
11	3.8	4.5	4.7	4.0	6.1	5.0	6.0	5.2	6.9	8.7	8.0	8.7	6.7	6.7	6.4	7.2	6.0	3.2	3.1	3.1	1.2	0.3	0.8	3.6
12	3.9	5.4	5.5	5.9	5.7	4.7	3.1	5.1	5.5	3.9	6.5	6.2	7.2	8.3	8.0	7.9	6.6	4.7	3.6	3.7	5.2	2.8	4.2	4.1
13	4.1	3.7	2.8	3.9	4.6	4.4	5.3	6.5	8.2	8.5	8.2	6.9	7.4	8.0	7.6	7.0	6.5	6.2	6.6	6.8	7.0	7.4	6.7	7.1
14	7.7	7.4	7.4	6.7	7.6	7.0	6.7	7.4	8.9	7.7	8.5	6.4	7.5	6.7	8.4	7.5	5.8	5.1	5.9	4.5	5.8	6.5	5.9	6.2
15	6.0	5.6	5.8	5.8	6.4	7.5	7.2	7.4	8.6	8.3	6.7	7.6	7.5	8.0	8.4	7.6	7.3	6.4	6.6	5.7	4.9	4.5	2.1	3.2
16	1.7	0.3	0.8	0.6	0.4	0.4	1.0	1.3	1.0	3.7	5.4	5.7	5.3	5.3	6.6	6.8	5.2	5.7	2.4	3.2	1.3	3.7	3.4	1.2
17	1.2	1.3	2.1	2.7	3.8	5.4	5.4	3.3	6.0	5.9	5.3	4.8	6.4	6.7	6.8	6.9	4.8	5.6	4.6	5.4	5.3	5.6	5.7	5.4
18	5.3	3.1	3.4	4.6	4.8	3.7	3.7	4.6	5.7	6.3	3.8	3.7	4.0	5.8	7.1	6.0	4.7	3.0	2.7	4.1	2.6	4.2	4.3	4.1
19	3.5	1.9	0.1	0.1	0.1	0.1	0.0	0.2	0.2	1.1	0.4	0.8	2.9	2.8	2.2	3.9	3.2	3.3	1.7	0.3	0.4	1.1	0.8	0.1
20	0.1	0.1	0.0	0.0	0.2	0.3	0.0	0.0	0.4	0.2	0.5	0.4	0.9	2.6	4.7	5.6	3.9	3.7	1.8	0.7	0.7	0.2	0.3	0.1
21	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	2.0	3.4	4.8	6.1	5.3	5.8	4.9	3.2	0.9	0.1	0.0	0.1	1.0	1.2	2.3
22	1.8	0.2	0.7	1.3	2.2	1.6	3.7	4.3	6.2	6.9	6.5	8.2	7.9	7.4	6.7	6.8	5.5	5.0	6.6	6.8	5.4	5.2	1.7	3.1
23	5.1	3.0	2.7	1.3	3.8	1.6	1.1	0.4	2.7	4.1	4.7	4.5	5.5	6.7	6.4	5.2	4.8	2.5	5.3	3.5	4.7	4.6	5.0	4.7
24	5.3	4.3	4.2	5.4	6.6	8.1	6.8	8.7	8.2	8.3	8.0	6.8	6.3	7.6	6.6	5.9	4.8	4.7	4.0	5.2	5.2	5.2	2.4	2.3
25	2.9	4.3	2.4	2.4	1.5	2.1	1.9	2.6	2.9	0.7	4.1	7.0	7.9	7.7	7.6	7.1	6.2	3.3	3.5	3.3	4.0	4.6	3.7	2.3
26	0.6	2.5	2.7	3.3	2.6	1.7	3.1	4.2	4.2	4.6	3.9	4.5	4.8	6.0	6.6	6.0	5.2	3.9	1.1	1.7	1.4	1.7	0.9	2.1
27	3.2	3.3	3.7	3.8	4.4	5.1	5.5	6.7	8.0	6.3	5.7	6.4	7.9	6.7	7.5	7.5	4.1	3.5	3.3	4.1	5.1	4.4	2.4	4.8
28	3.9	5.1	4.9	4.7	4.3	3.7	3.7	3.0	4.2	5.2	4.0	6.3	6.6	6.9	6.5	5.8	4.8	5.5	5.7	5.4	4.1	5.9	3.6	4.5
29	5.0	5.3	4.6	4.1	4.4	4.2	3.8	2.7	5.9	5.7	6.4	5.0	6.6	7.1	6.7	6.4	5.9	5.2	5.4	3.3	3.3	5.4	5.4	5.5
30	5.4	4.8	3.6	3.4	4.1	1.9	1.8	6.0	5.4	4.7	6.3	4.8	5.2	5.8	5.8	2.1	3.2	1.3	1.7	1.9	2.3	2.9	1.4	2.0
31	1.9	3.0	1.7	1.4	3.2	3.4	2.5	1.9	1.6	2.7	3.4	5.3	5.5	5.5	5.3	5.7	4.9	0.5	0.0	1.1	2.1	0.6	2.3	1.4

Table 3-23. Wind Speed Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET Sigθ1 (deg) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	16.1	15.2	14.8	17.0	23.2	15.2	29.0	15.8	15.8	24.1	25.4	29.5	24.1	29.5	26.7	27.3	35.1	30.1	28.5	31.5	19.8	19.2	19.8	17.0
2	17.1	26.8	17.6	19.3	19.7	16.0	14.9	17.0	31.3	36.4	30.1	21.8	21.3	22.1	20.1	21.0	19.1	24.2	28.9	33.9	28.7	33.7	31.2	30.7
3	25.9	73.9	35.9	15.7	15.5	18.7	17.5	35.7	35.1	26.3	21.4	23.5	21.8	19.6	20.4	21.4	22.4	26.7	31.5	25.2	31.1	36.1	24.8	36.9
4	31.7	29.7	22.0	31.1	16.4	28.2	24.7	17.6	23.7	31.2	31.9	30.3	33.6	29.2	31.8	34.2	32.3	31.9	21.5	16.0	15.7	16.3	24.0	16.0
5	15.5	16.3	13.9	21.5	18.0	34.7	17.4	16.6	19.0	24.8	27.0	32.3	33.0	26.5	23.2	30.6	29.2	30.1	34.1	30.7	21.9	21.2	22.5	16.3
6	14.8	17.0	17.2	15.3	17.5	21.4	15.9	19.3	22.1	29.1	32.6	28.1	27.4	25.4	23.2	20.5	19.9	21.3	23.5	25.1	45.6	20.5	47.4	31.8
7	15.8	13.8	29.7	12.6	17.1	14.4	14.9	24.9	29.5	22.5	21.6	33.5	25.7	33.4	30.0	30.2	27.4	27.1	26.7	18.0	23.6	20.2	20.2	25.2
8	18.3	19.6	21.6	15.8	18.2	23.6	24.7	18.7	29.8	31.7	22.5	20.9	19.7	19.4	23.1	23.8	19.6	18.8	22.3	23.6	29.3	14.9	24.1	14.7
9	14.2	16.0	33.7	20.4	13.3	13.8	12.4	21.9	20.4	27.6	30.1	26.7	26.3	24.3	25.3	23.1	26.2	25.9	25.2	23.6	15.5	15.9	15.9	15.8
10	15.4	15.4	16.4	26.3	25.4	16.1	16.5	16.3	20.1	26.0	33.4	33.6	33.1	30.9	33.5	32.5	32.2	32.2	21.4	23.8	20.5	22.7	39.5	30.6
11	31.1	26.8	31.5	32.3	26.7	25.2	24.7	28.6	29.0	24.1	25.8	25.9	33.9	30.4	28.6	22.7	25.2	33.4	35.3	30.7	34.0	33.1	30.3	28.9
12	21.3	18.5	17.4	17.9	16.3	17.1	26.7	20.4	23.1	34.4	29.2	29.6	31.8	29.0	26.9	27.5	30.9	33.1	31.8	33.1	29.1	29.5	16.9	20.7
13	16.9	16.5	16.1	23.6	16.6	15.8	15.2	14.9	19.3	23.0	28.5	31.9	30.3	26.8	27.6	29.1	30.7	21.0	17.7	17.6	16.4	18.1	15.7	15.5
14	15.2	15.0	15.3	17.0	16.3	16.9	16.5	16.0	18.1	30.0	27.4	31.7	29.7	32.2	24.1	30.1	32.5	33.4	29.3	33.3	28.6	20.1	25.9	20.4
15	20.7	17.5	19.2	17.2	17.0	15.7	16.5	15.7	20.8	28.4	34.4	31.3	32.8	31.4	31.8	32.4	32.6	27.9	24.6	26.9	27.0	23.4	31.8	20.8
16	35.0	30.8	28.9	44.3	24.3	23.1	18.0	26.7	28.7	22.9	22.5	23.2	23.7	21.8	22.5	20.8	22.3	23.0	28.5	22.5	31.1	20.5	15.7	16.4
17	14.9	15.7	15.5	14.7	15.9	17.0	16.8	28.2	20.5	28.0	32.9	34.0	27.5	25.9	26.3	25.2	29.8	24.2	34.6	25.1	20.7	20.5	20.4	24.1
18	21.3	24.2	31.8	30.0	19.0	16.5	16.4	19.9	20.1	19.3	26.4	30.1	29.8	20.8	20.8	21.8	20.7	22.1	22.0	21.8	20.8	23.5	22.9	27.5
19	30.9	51.8	61.5	46.7	36.6	12.2	49.5	42.6	54.4	43.7	41.0	30.3	22.3	24.2	28.6	26.5	25.7	26.9	26.5	33.4	33.6	33.3	41.2	34.7
20	38.6	34.6	53.4	34.3	36.4	37.4	31.1	79.7	51.0	26.8	26.3	29.1	29.2	28.1	23.2	24.2	33.3	25.1	26.5	24.9	23.4	24.0	20.9	17.5
21	10.4	12.7	10.3	14.6	12.5	7.8	9.4	18.3	55.5	21.9	26.3	23.5	23.8	27.6	27.5	23.4	19.8	23.6	30.3	29.0	34.1	51.5	20.3	19.0
22	19.0	22.4	24.3	29.0	25.2	20.7	15.5	16.6	23.4	30.2	32.5	32.9	31.7	33.0	33.6	31.7	34.5	31.1	18.7	16.4	19.7	23.5	31.4	24.8
23	16.5	23.2	24.1	15.4	13.0	17.2	18.5	18.7	25.3	34.5	31.3	33.4	27.6	27.9	22.0	21.4	18.7	25.2	22.6	31.5	27.0	30.9	17.9	14.9
24	14.2	14.8	14.1	15.7	16.4	15.8	15.5	16.9	22.9	20.5	22.7	25.1	29.2	30.2	30.9	32.2	33.1	32.3	27.3	24.3	21.0	26.3	22.5	30.7
25	23.8	20.5	15.7	21.6	23.2	31.4	27.8	31.7	25.3	33.1	32.9	21.9	24.6	25.7	25.7	24.5	24.0	32.2	28.9	27.1	18.2	17.2	23.7	26.0
26	15.0	17.0	15.4	15.2	14.3	28.4	25.6	18.7	24.0	22.0	35.8	32.4	30.2	27.1	25.6	25.2	27.5	25.3	32.3	28.1	40.5	29.5	22.1	16.9
27	17.0	17.6	16.0	15.2	15.5	14.3	14.9	15.3	22.9	31.9	35.2	33.7	30.6	28.0	24.7	24.0	20.3	32.4	30.6	18.1	14.7	15.9	21.9	13.2
28	27.5	15.2	14.6	14.6	14.4	13.7	14.3	16.0	26.0	33.1	33.6	28.5	25.4	24.5	27.9	29.5	33.3	26.4	14.4	16.9	19.2	15.8	42.2	16.6
29	15.5	15.5	15.2	15.7	14.3	16.4	19.7	17.0	15.9	16.8	17.1	26.3	30.4	31.4	31.5	28.4	29.1	21.9	15.7	26.8	28.7	24.3	15.5	16.0
30	15.4	15.9	14.6	15.4	17.1	45.7	54.7	24.1	23.1	25.1	22.9	20.5	23.1	21.3	22.5	31.3	27.5	31.8	20.4	15.2	21.6	16.5	20.8	53.9
31	17.0	13.6	15.5	19.1	26.4	14.3	26.4	18.6	19.6	33.1	32.9	23.5	23.2	25.9	26.9	20.1	19.6	44.4	66.5	18.3	20.5	35.1	47.8	77.4

Table 3-24. Sigma Theta Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET VWS (MPH) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	-0.2	0.0	0.2
2	-0.2	-0.1	0.0	0.0	-0.2	-0.1	0.0	0.2	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.1	0.0	0.1	0.0	0.1	0.2	0.0	0.1
3	0.0	0.0	0.1	0.1	0.2	0.0	0.2	0.1	0.1	0.1	-0.1	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
4	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	-0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.2	0.4
5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.0	0.1	0.2	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0
6	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.2	0.2	0.1	0.0	-0.2	-0.2	-0.3	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.1	0.1	0.1	0.0
7	0.1	0.2	0.1	0.1	0.2	0.3	0.3	0.1	0.1	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.1	-0.1	0.2	0.2	0.2	0.2	0.1	0.1
8	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.0	-0.2	-0.2	-0.5	-0.3	-0.2	-0.3	-0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.2
9	0.3	0.1	0.2	0.2	0.1	0.3	0.4	0.2	0.1	0.1	0.2	0.0	-0.1	-0.3	-0.1	-0.1	-0.1	-0.1	0.1	0.0	0.0	0.1	0.2	0.1
10	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	-0.2	-0.3	0.0	-0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.1	0.0	0.0
11	0.1	0.2	0.1	0.1	0.0	0.1	-0.1	0.1	0.0	-0.1	0.0	0.0	0.1	0.0	0.1	-0.2	-0.2	0.0	-0.1	0.1	0.0	0.1	0.1	0.2
12	0.3	0.2	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.0	0.2	0.1	0.1	0.0	0.0	0.1	-0.1	0.0	0.1	0.1	0.1	0.1	0.3	0.3
13	0.3	0.3	0.3	0.2	0.3	0.2	0.3	0.4	0.2	0.2	0.2	0.0	0.0	0.0	-0.1	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1
14	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.3	0.2
15	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.1	-0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
16	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	-0.3	-0.1	0.0	-0.3	-0.3	-0.3	0.0	0.1	0.1	0.0	0.1	0.2	0.1
17	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	-0.2	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.3	-0.2	-0.2
18	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	-0.2	-0.3	-0.3	0.0	-0.2	-0.2	-0.2	-0.2	0.0	-0.2	-0.3
19	0.1	-0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1
20	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0	-0.1	-0.1	-0.1	-0.3	-0.1	-0.2	-0.1	0.0	0.1	0.0	-0.1	-0.1	-0.1
22	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.1	0.0	0.0	-0.1	-0.1	0.0	0.1	0.2	0.1	0.1	0.1	0.0	0.1
23	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.1	0.1	0.1	0.0	-0.1	-0.2	-0.2	-0.3	-0.1	-0.1	0.0	-0.2	0.0	0.1	0.1	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	-0.1	0.0	0.0	0.0	0.0	0.1	0.0
25	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	-0.1	0.0	-0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.2
28	0.1	-0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	-0.2	-0.1	0.0	-0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.2
29	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.2	0.0	0.1	0.1	-0.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	-0.1	0.0
30	0.1	0.1	0.2	0.1	0.1	0.0	-0.1	0.0	-0.2	-0.2	-0.3	-0.2	-0.3	-0.2	-0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
31	0.1	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.1	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.3	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Table 3-25. Vertical Wind Speed Monthly Summary Site 2

MONTHLY SUMMARY REPORT

TRUE GEOTHERMAL

LOCATION: SITE 2, MET SIG W (DEG) DATA FOR: OCT 1990

HOURS (HST)

HR-END DAY	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0.5	0.5	0.3	0.3	0.3	0.5	0.4	0.5	0.7	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.6	0.2	0.1	0.2	0.3	0.2	0.3	0.3
2	0.2	0.2	0.2	0.2	0.1	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.7	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.6	0.4	0.4
3	0.4	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.3	0.3
4	0.3	0.3	0.3	0.3	0.3	0.7	0.4	0.5	0.7	0.9	0.9	0.9	0.7	0.8	0.9	0.9	1.0	0.9	0.7	0.5	0.5	0.4	0.5	0.5
5	0.5	0.6	0.5	0.5	0.6	0.5	0.6	0.6	0.8	0.9	0.9	1.1	1.2	1.0	0.8	1.0	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4
6	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.5	0.7	0.8	0.9	0.8	0.8	0.8	0.6	0.6	0.6	0.5	0.4	0.3	0.4	0.3	0.3	0.2
7	0.2	0.3	0.2	0.2	0.3	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.6	0.7	0.6	0.7	0.4	0.4	0.4	0.3	0.3	0.3	0.2
8	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.5	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.4	0.3	0.2	0.1	0.2	0.3	0.3
9	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.6	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.5	0.4	0.2	0.2	0.3	0.5	0.4
10	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.7	0.9	1.1	1.0	1.2	1.1	1.1	1.1	1.0	0.9	0.7	0.6	0.6	0.6	0.6	0.5
11	0.5	0.6	0.8	0.7	0.7	0.8	0.7	0.8	0.9	0.9	0.9	1.0	1.0	0.8	0.8	0.6	0.7	0.6	0.6	0.6	0.5	0.4	0.4	0.5
12	0.5	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.6	0.7	0.9	0.8	1.1	0.9	0.9	0.9	0.9	0.8	0.6	0.6	0.5	0.4	0.4	0.5
13	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.9	1.0	1.0	0.9	0.9	1.0	0.8	0.6	0.6	0.6	0.6	0.6	0.5	0.6
14	0.6	0.6	0.5	0.4	0.7	0.6	0.6	0.6	0.6	0.9	0.9	0.8	0.9	0.9	1.0	1.0	0.8	0.8	0.7	0.5	0.7	0.5	0.7	0.6
15	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.8	0.9	1.0	1.0	1.0	1.0	1.1	0.9	1.1	0.8	0.6	0.6	0.5	0.4	0.3	0.3
16	0.3	0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.5	0.6	0.4	0.6	0.4	0.3	0.3	0.4	0.3	0.3
17	0.3	0.2	0.3	0.3	0.4	0.5	0.4	0.5	0.5	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.6	0.6	0.6	0.5	0.5	0.4	0.5	0.4
18	0.6	0.4	0.6	0.6	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.5	0.3	0.6	0.4	0.4
19	0.6	0.4	0.3	0.3	0.2	0.1	0.2	0.2	0.3	0.5	0.3	0.4	0.5	0.5	0.6	0.7	0.6	0.6	0.5	0.4	0.5	0.5	0.5	0.4
20	0.2	0.2	0.1	0.1	0.3	0.3	0.1	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.3	0.2	0.2	0.1	0.2	0.1
21	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.3	0.6	0.6	0.7	0.8	0.6	0.5	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.4
22	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.6	0.9	0.9	1.0	1.0	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.2	0.3
23	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.4	0.6	0.6	0.5	0.6	0.6	0.5	0.4	0.4	0.4	0.5	0.6	0.5	0.7	0.4	0.4
24	0.3	0.3	0.3	0.4	0.5	0.6	0.4	0.6	0.7	0.6	0.7	0.7	0.9	0.9	0.9	1.0	0.7	0.7	0.6	0.5	0.4	0.7	0.3	0.3
25	0.4	0.4	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.8	0.9	0.8	0.8	0.7	0.5	0.5	0.3	0.3	0.3	0.3	0.3
26	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.5	0.7	0.7	0.7	0.8	0.8	0.7	0.6	0.5	0.3	0.3	0.4	0.3	0.2	0.2
27	0.2	0.2	0.3	0.4	0.3	0.4	0.4	0.5	0.7	0.8	0.8	1.0	0.9	0.8	0.9	0.7	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.4
28	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.6	0.7	0.6	0.9	0.7	0.8	0.8	0.9	0.8	0.6	0.4	0.5	0.4	0.5	0.5	0.4
29	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.2	0.5	0.6	0.6	0.5	0.8	1.0	0.9	0.8	0.8	0.5	0.5	0.6	0.5	0.6	0.4	0.5
30	0.5	0.4	0.4	0.3	0.4	0.3	0.5	0.8	0.5	0.5	0.5	0.4	0.4	0.6	0.5	0.4	0.5	0.2	0.2	0.2	0.3	0.3	0.3	0.3
31	0.2	0.3	0.2	0.2	0.3	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.2	0.1	0.1	0.2	0.1	0.2	0.3

Table 3-26. Sigma W Monthly Summary Site 2

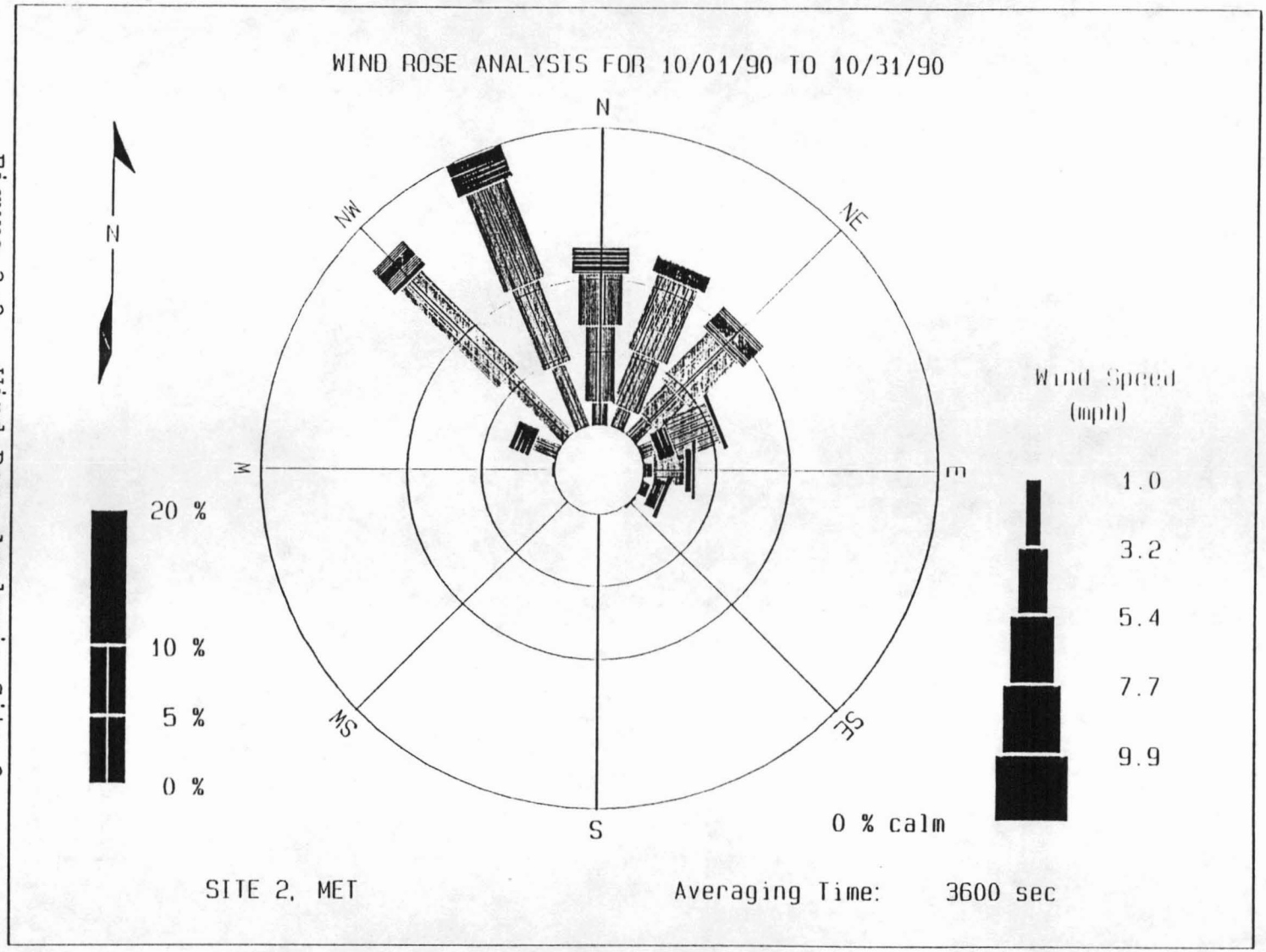

Figure 3-2. Wind Rose Analysis Site 2

WD (DEG) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	359.	10/13/90	16:00:00		
Second Highest:	359.	10/04/90	03:00:00		
Lowest Value:	0.	10/03/90	08:00:00		
Arithmetic Mean:	198.		10.000	Percentile:	16.
Standard Deviation:	142.		20.000	Percentile:	34.
			30.000	Percentile:	54.
Geometric Mean:	110.		40.000	Percentile:	96.
Standard Deviation:	4.		50.000	Percentile:	298.
			60.000	Percentile:	313.
Valid Data:	744		70.000	Percentile:	324.
Invalid Data:	0		80.000	Percentile:	332.
Missing Data:	0		90.000	Percentile:	343.
Data Recovery:	100.00%		100.000	Percentile:	359.

SITE 2, MET Averaging Time: 3600 sec

Table 3-27. Wind Direction Summary Statistics Site 2

WS (MPH) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	9.8	10/05/90	13:00:00		
Second Highest:	9.8	10/10/90	08:00:00		
Lowest Value:	0.0	10/02/90	02:00:00		
Arithmetic Mean:	4.2		10.000	Percentile:	0.4
Standard Deviation:	2.5		20.000	Percentile:	1.7
			30.000	Percentile:	2.9
Geometric Mean:	2.9		40.000	Percentile:	3.7
Standard Deviation:	3.3		50.000	Percentile:	4.4
			60.000	Percentile:	5.2
Valid Data:	744		70.000	Percentile:	5.7
Invalid Data:	0		80.000	Percentile:	6.5
Missing Data:	0		90.000	Percentile:	7.5
Data Recovery:	100.00%		100.000	Percentile:	9.8

SITE 2, MET Averaging Time: 3600 sec

Table 3-28. Wind Speed Summary Statistics Site 2

SigÕ1 (deg) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	79.7	10/20/90	07:00:00		
Second Highest:	77.4	10/31/90	23:00:00		
Lowest Value:	7.8	10/21/90	05:00:00		
Arithmetic Mean:	24.8		10.000	Percentile:	15.5
Standard Deviation:	8.5		20.000	Percentile:	17.0
			30.000	Percentile:	19.7
Geometric Mean:	23.6		40.000	Percentile:	21.9
Standard Deviation:	1.4		50.000	Percentile:	24.0
			60.000	Percentile:	26.3
Valid Data:	744		70.000	Percentile:	28.7
Invalid Data:	0		80.000	Percentile:	31.1
Missing Data:	0		90.000	Percentile:	33.4
Data Recovery:	100.00%		100.000	Percentile:	79.7

SITE 2, MET Averaging Time: 3600 sec

Table 3-29. Sigma Theta Summary Statistics Site 2

VWS (MPH) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	0.4	10/01/90	08:00:00		
Second Highest:	0.4	10/04/90	23:00:00		
Lowest Value:	-0.5	10/08/90	12:00:00		
Arithmetic Mean:	0.0		10.000	Percentile:	-0.1
Standard Deviation:	0.1		20.000	Percentile:	0.0
			30.000	Percentile:	0.0
Geometric Mean:	0.0		40.000	Percentile:	0.0
Standard Deviation:	1.0		50.000	Percentile:	0.0
			60.000	Percentile:	0.1
Valid Data:	744		70.000	Percentile:	0.1
Invalid Data:	0		80.000	Percentile:	0.1
Missing Data:	0		90.000	Percentile:	0.2
Data Recovery:	100.00%		100.000	Percentile:	0.4

SITE 2, MET Averaging Time: 3600 sec

Table 3-30. Vertical Wind Speed Summary Statistics Site 2

SIG W (DEG) SUMMARY STATISTICS FOR 10/01/90 - 10/31/90

Highest Value:	1.225	10/10/90	12:00:00		
Second Highest:	1.165	10/05/90	12:00:00		
Lowest Value:	0.020	10/21/90	03:00:00		
Arithmetic Mean:	0.499		10.000	Percentile:	0.237
Standard Deviation:	0.231		20.000	Percentile:	0.316
			30.000	Percentile:	0.356
Geometric Mean:	0.000		40.000	Percentile:	0.415
Standard Deviation:	1.000		50.000	Percentile:	0.454
			60.000	Percentile:	0.514
Valid Data:	744		70.000	Percentile:	0.573
Invalid Data:	0		80.000	Percentile:	0.691
Missing Data:	0		90.000	Percentile:	0.869
Data Recovery:	100.00%		100.000	Percentile:	1.225

SITE 2, MET Averaging Time: 3600 sec

Table 3-31. Sigma W Summary Statistics Site 2

MEASUREMENT TECHNOLOGIES

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